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*On Cæcum of Capybara.*—Dr. H. C. CHAPMAN stated that in making a post-mortem examination of the Capybara (*Hydrochærus Capybara*), which recently died at the Zoological Garden, his attention was particularly called to the size of the cæcum, which measured thirty-four inches in length, with a circumference of eighteen inches in its widest portion. Not only is the organ relatively enormous when compared with the size of the animal, but absolutely so when it is remembered that the cæcum in the horse and rhinoceros, while more capacious, attains, however, only a length of thirty and thirty-six inches respectively.

As regards the form of the cæcum, with the exception of the blind extremity being more obtuse than is usually seen in rodents, there was nothing peculiar. Noticeable, however, was its marked sacculated condition, due to the well-developed longitudinal bands.

|                               |            |
|-------------------------------|------------|
| Length of Capybara . . . . .  | 38 inches. |
| “ “ small intestine . . . . . | 248 “      |
| “ “ large intestine . . . . . | 48 “       |
| “ “ cæcum . . . . .           | 34 “       |

*On Reflex Action in Turtles.*—Dr. H. C. CHAPMAN remarked that he took the opportunity of calling attention to the fact that decapitated turtles exhibit a responsive action to the application of acetic acid similar to that first observed by Pflüger in frogs. Not having at his disposition a frog, and wishing to demonstrate some of the phenomena of reflex action, he decapitated a turtle, and three hours afterward applied a drop of acetic acid to the anus. Almost immediately both the posterior extremities came from out of the shell, and, turning towards each other, with flexed toes made efforts to remove the acid. Twenty-four hours later he repeated the experiment, with the same result.

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#### APRIL 17.

The President, Dr. RUSCHENBERGER, in the chair.

Forty-one members present.

A paper entitled “Report on the Brachiopoda of Alaska and the Adjacent Shores of Northwestern America,” by W. H. Dall, was presented for publication.

The election of Dr. J. Gibbons Hunt as Professor of Histology and Microscopic Technology was announced.

*On Intestinal Parasites of Termes flavipes.*—Prof. LEIDY remarked that in seeking small animals beneath stones and fragments of wood in our forests, observing the very common White Ant, *Termes flavipes*, he noticed that the intestine of the insect,

seen in the translucent abdomen, was distended with brown matter. Feeling curious to learn the exact nature of this matter, he was surprised to find that it consisted largely of infusorial and other parasites, mingled with minute particles of decayed wood. In many instances the parasites are so numerous as to make up the greater portion of the bulk of the intestinal pulp. Every individual he had examined, of workers, soldiers, and winged forms, was infested with the parasites, which may be estimated by millions. As the discovery to him of this new world of parasitic life was recent, he had not yet had time to sufficiently examine scientific literature to ascertain whether the parasites had been discovered and described by others. M. C. Lespes, in a memoir on the organization of the *Termes lucifugus* of France, published in the *Annales des Sciences Naturelles* for 1856, remarks that the intestine is usually occupied by a kind of brown pulp, a living agglomeration of infusoria, and in another paper in the same volume, after describing a nematoid worm, *Isacis migrans*, infesting the *Termes*, he remarks that he had found in the intestine of the insect a great quantity of parasites, upon which he proposed to say something in future.

The parasites observed in our White Ant consist of five different kinds, of which three are animal and two vegetable in character. One of the latter consists of filaments of the algoid form he had once described under the name of *Arthromitus*, the other not so frequent is a *Spirillum*, probably *S. undula*.

The animal parasites, of which drawings were exhibited, are as follows:—

#### 1. TRICHONYMPHA AGILIS.

This is a remarkable creature of obscure affinity, but probably related with the *Turbellaria* on the one hand and by evolution with the *Ciliate Infusoria* on the other. The animal is about  $\frac{1}{360}$ th of an inch long and about half the breadth of the length. It is fusiform, and is clothed with ciliate hairs of extraordinary length. The head is mammilliform; the posterior end of the body from subacute to obtuse according as it is narrowed or shortened by contraction. The cilia investing the body appear to consist of three sets: the shortest ones waving outwardly and downward from the head; a second set extending from the head the length of the body, incessantly waving downward and swelling outwardly; and the third set, the longest of all, extending from the head beneath the others in a longitudinal spiral manner far beyond the posterior end of the body, where they form a loosely twisted fascicle with divergent ends. The arrangement of the long cilia, clothing the body, reminded him of the nymphs in a recent spectacular drama, in which they appeared with their nakedness barely concealed by long cords suspended from the shoulders, and this arrangement has suggested the name applied to the parasite.

He was not positive whether he had been able correctly to interpret the interior structure of the animal, but it appeared to him to resemble more that of the *Rhabdocœla* than that of any of the *Protozoa*. No appearance of vascular or nervous system could be detected. The animal appeared to be capable of ingesting particles of solid food frequently observed in considerable quantity in the stomach occupying the posterior two-thirds of the body. The mouth apparently was a rounded pore at the summit of the head. From this a narrow tube expanded in a pharyngeal pouch communicating behind with the capacious stomach. An anal outlet may exist at the back end of the body, but was not detected. Opposite the conjunction of the pharyngeal pouch and the stomach, a granular nuclear body is constantly observed.

*Trichonympha*, though incessantly and actively in motion, usually remains stationary in position, but occasionally advances with feeble jerking propulsion. The chief movements consist in frequent retraction or shortening and bending of the cephalic end with rapid waving and swelling outwardly of the long ciliary hairs. The motion of the latter resembles the flowing of a thin sheet of water over the brim of a fountain vase or basin swayed to one side or the other by a current of wind. The longest cilia, extending beyond the back of the body in a loosely twisted fascicle, are the least active, but at times stretch outwardly and become more divergent at the ends, or they become more closely applied to the sides of the body. When the head is bent to one or the other side, with the summit directed forward, it gives rise to an appearance resembling the spiral peristome of a *Stentor*. Viewed on end, the parasite appears circular with long divergent cilia, and reminds one of the upper view of a *Vorticella*.

## 2. PYRSONYMPHA VERTENS.

The remaining two animal parasites are Infusoria. The larger of the two is often more abundant than the *Trichonympha*, and is about the  $\frac{1}{80}$ th of an inch in length. It is more delicate, less distinctly defined, and undergoes rapid dissolution after removal from the intestine of the Termite. It is elongated fusiform, or when shortened clavate or pyriform in outline. Like *Trichonympha*, it usually remains stationary in position, while actively moving, writhing, apparently twisting, and often bending in a waving manner from one extremity to the other. In motion, longitudinally spiral and parallel lines become more or less evident, and frequently cause serrated projections at the extremities, or at the prominence of the bends when produced at the lateral borders. These exhibit a rapid waving motion, strikingly resembling the movement of flames, and probably denoting the presence of minute cilia, though these were not positively seen. A narrow band extends the length of the body, sometimes projecting at one end, and moves in long, angular waves, flexing the body in ac-

cordance with its movement. The body appears to be composed of finely granular protoplasm, with but faint distinction of endo and ectosarc. A large oval or round granular nucleus occupies a position in advance of the middle of the body. The position of the mouth was not detected, though one is most probably present, as the animalcule is often replete with large particles of food, consisting of bits of wood. *Pyrsonympha* may be the larval condition of *Trichonympha*, though there is no evidence that such is the case.

### 3. DINENYMPHA GRACILIS.

A Ciliate Infusorian, the smallest and most abundant of the three animal parasites, about  $\frac{1}{300}$ th of an inch in length, is flattened, fusiform, and in motion often twisted. It is longitudinally and, in the twisted condition, spirally striated, and is invested everywhere with fine cilia. The animal usually, remaining like its companions nearly stationary in position, writhes from side to side, shortens and widens, or lengthens and contracts, and rotates in the long axis. The longitudinal lines of the body by contraction produce a serrated appearance at one end, or at the prominences of the lateral borders when the body is twisted. The interior of the body is finely granular, often with one or more large globules, probably consisting of a nucleus, and at times of contractile vesicles or vacuoles. No mouth could be detected, although one probably exists, as the animal often contains particles of solid food, sometimes comparatively of enormous size.

The great accumulation of parasites, apparently constantly existing in the White Ant, one of our most common insects, will afford a new and wonderful source of delight to our microscopists. They should be examined in a denser liquid than water, as this produces their rapid destruction. The white of egg thinned with water, Prof. L. finds to be a good medium in which to examine these and other minute parasites from the interior of animals.

The nematoid worm *Isacis migrans*, discovered M. Lespes, so abundantly existing within the *Termes lucifugus*, and also externally in the nest of this insect, in France, Prof. L. had occasionally found in the *Termes flavipes*.

*On the Eucalyptus Globulus.*—JOSEPH WHARTON remarked that about five years ago he wrote to London for seeds of the *Eucalyptus globulus*, and had them planted in his green-house in the early spring of 1872. The young trees thrived well there, and, when transplanted, grew vigorously in the open air until the approach of winter led him to remove them to the green-house. By thus putting them in the open air every spring, and replacing them under glass during the winter, they continued to grow until in the fall of 1876 he gave several to the horticultural department of the Centennial Exhibition, and several to a friend; others he